

Assessment of urinary incontinence in older adults, part 1

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Clinical question

How should I assess my older patient who has urinary incontinence (UI)?

Bottom line

Urinary incontinence, the involuntary loss of any urine,¹ is a common problem among people older than 65 or those living with frailty but should not be considered part of “normal” aging. The cornerstones of assessment are comprehensive history, basic physical examination, and focused investigations. Urinary incontinence is a multifactorial geriatric syndrome, not necessarily a disorder of the lower urinary tract itself.² A detailed review of this topic was published in 2015 in the *Canadian Geriatrics Society Journal of CME*.³

Evidence

- Patients older than 65 living with frailty, particularly those living in institutional care settings, have among the highest rates of UI of any group other than people with spinal cord injury.⁴
- Brain changes (eg, white matter hyperintensities) are implicated in the pathogenesis of UI.⁵ It is unclear whether midlife interventions such as blood pressure control can prevent the development of lower urinary tract symptoms (LUTS), including UI.
- Urinary incontinence is associated with social isolation, depression, and falls.⁶⁻⁸

Approach

Clinical classification of type of incontinence is relevant:

Overactive bladder (OAB). Overactive bladder is urinary urgency, usually accompanied by daytime frequency or nocturia, not caused by urinary tract infection or other disease. Overactive bladder may cause incontinence (OAB wet) or not (OAB dry).⁹ It is not synonymous with detrusor overactivity, the finding of detrusor contractions during cystometry.¹ The correlation between OAB and detrusor overactivity in older adults is poor and cystometry is not usually necessary.²

Stress urinary incontinence. Stress urinary incontinence is the involuntary loss of urine on effort or physical exertion, or with sneezing or coughing.¹ Risk factors include genetics, parity, obesity, and smoking. Stress urinary incontinence is due to urethral sphincter incompetence or excessive mobility of pelvic floor musculature decreasing the support necessary to protect against

fluctuations in intra-abdominal pressure. Stress incontinence is rare in men who have not had prostatectomy.

Functional incontinence. Continence requires an individual to recognize the need to void and to locate, get to, and use a toilet. Failure to maintain continence due to behavioural, cognitive, environmental, or disease-related factors is termed “functional” or “disability associated” incontinence.¹ An older person who is restrained by bedrails, is unable to gain access to their mobility aid, or moves to a facility with inadequate signage to the toilets may lose continence even with normal lower urinary tract function.

Overflow incontinence. Although postvoid residual volume rises with normal aging, the level at which this rise becomes of pathologic importance is dictated by outcomes or consequences rather than by an arbitrary cutoff.¹⁰ Overflow incontinence can be seen in patients with chronic painless urinary retention, when the intravesical pressure can no longer be contained by the urethral sphincter, classically leading to frequent small-volume voids and dribbling incontinence.¹¹

It is common for more than one type of incontinence to be present (most commonly urgency and stress incontinence). The predominant type in terms of impact should be noted in the patient’s medical record (eg, “urgency predominant mixed incontinence”).

Assessment should include reviewing the following:

- lower urinary tract symptoms;
- storage symptoms (ie, urgency, frequency, nocturia, stress incontinence);
- voiding symptoms (eg, straining, slow stream, terminal dribble);
- postmicturition symptoms (eg, feeling of incomplete emptying, postvoid dribbling);
- comorbidities (**Table 1**)^{12,13};
- medications (**Table 2**)^{12,13};
- function and cognition;
- self-management strategies (eg, fluid intake, pad use); and
- impact on quality of life.

Box 1 summarizes causes of more acute and subacute incontinence.¹²⁻¹⁴

Implementation

Up to half of patients with UI never seek assistance for their symptoms.^{15,16} Patients may fail to seek help because of embarrassment, a belief that UI is a normal part of aging, or a belief that UI is untreatable.¹⁷ It is imperative that health care professionals dealing with those at risk

Table 1. Factors that can cause or contribute to UI in older adults living with frailty

FACTORS	COMMENTS	IMPLICATIONS FOR MANAGEMENT
Diabetes mellitus	Poor control can cause polyuria and precipitate or exacerbate incontinence; also associated with increased likelihood of urgency UI and diabetic neuropathic bladder	Better control of diabetes can reduce osmotic diuresis and associated polyuria and improve UI
Degenerative joint disease	Can impair mobility and precipitate urgency UI	Optimal pharmacologic and nonpharmacologic pain management can improve mobility and toileting ability
Chronic pulmonary disease	Associated cough can worsen stress UI	Cough suppression can reduce stress incontinence and cough-induced urgency UI
Congestive heart failure, lower extremity venous insufficiency	Increased nighttime urine production can contribute to nocturia and UI	Optimizing pharmacologic management of congestive heart failure, sodium restriction, support stockings, leg elevation, and a late-afternoon dose of a rapid-acting diuretic may reduce nocturnal polyuria and associated nocturia and nighttime UI
Sleep apnea	May increase nighttime urine production by increasing production of atrial natriuretic peptide	Diagnosis and treatment of sleep apnea, usually with continuous positive airway pressure devices, may improve the condition and reduce nocturnal polyuria and associated nocturia and UI
Severe constipation and fecal impaction	Associated with “double” incontinence (urinary and fecal)	<ul style="list-style-type: none"> • Appropriate use of stool softeners • Adequate fluid intake and exercise • Disimpaction if necessary
Neurologic and psychiatric conditions		
• Stroke	Can precipitate urgency UI and less often urinary retention; also impairs mobility	<ul style="list-style-type: none"> • UI after an acute stroke often resolves with rehabilitation; persistent UI should be further evaluated • Regular toileting assistance is essential for those with persistent mobility impairment • Optimizing management may improve mobility and improve UI
• Parkinson disease	Associated with urgency UI; also causes impaired mobility and cognition in late stages	Regular toileting assistance is essential for those with mobility and cognitive impairments in late stages
• Normal pressure hydrocephalus	Presents with UI, along with gait and cognitive impairments	Patients presenting with all 3 symptoms should be considered for brain imaging to rule out this condition, as it may improve with a ventricular-peritoneal shunt
• Dementia (Alzheimer disease, multi-infarct, others)	Associated with urgency UI; impaired cognition and apraxia interfere with toileting and hygiene	Regular toileting assistance is essential for those with mobility and cognitive impairment in late stages
• Depression	May impair motivation to be continent; may also be a consequence of incontinence	Optimizing pharmacologic management of depression may improve UI
Medications	See Table 2 for more information ^{12,13}	Discontinuation or modification of drug regimen
Functional impairments <ul style="list-style-type: none"> • Impaired mobility • Impaired cognition 	Impaired mobility or cognition due to a variety of conditions listed above and others can interfere with the ability to toilet independently and precipitate UI	Regular toileting assistance is essential for those with severe mobility or cognitive impairment
Environmental factors <ul style="list-style-type: none"> • Inaccessible toilets • Unsafe toilet facilities • Unavailable caregivers for toileting assistance 	Frail, functionally impaired persons require accessible, safe toilet facilities and in many cases human assistance to be continent	Environmental alterations may be helpful; supportive measures such as pads may be necessary if caregiver assistance is not regularly available

UI—urinary incontinence.

Adapted with permission from the International Continence Society.¹³

actively identify UI through focused questioning and assessment. Unfortunately, many clinicians contribute to the care gap because of limited confidence and preconceptions about the efficacy of treatments or by prioritizing other

“more important” conditions.¹⁸ Validated case-finding tools have been employed in primary care practice, including the Bladder Control Self-assessment Questionnaire and the Overactive Bladder Validated 8-question questionnaire.^{19,20}

Table 2. Medications that may contribute to lower urinary tract symptoms and UI

MEDICATIONS	EFFECTS ON CONTINENCE
α -Adrenergic agonists, including midodrine, clonidine, and phenylephrine	Increase smooth muscle tone in urethra and prostatic capsule and may precipitate obstruction, urinary retention, and related symptoms
α -Adrenergic antagonists (α -blockers), such as doxazosin, alfuzosin, and tamsulosin	Decrease smooth muscle tone in the urethra and may precipitate stress UI in women
Angiotensin-converting enzyme inhibitors	Cause cough that can exacerbate UI
Anticholinergics (see Table 4 in Dyks and Sadowski ¹²)	<ul style="list-style-type: none"> • May cause impaired emptying, urinary retention, and constipation that can contribute to UI • May cause cognitive impairment and reduce effective toileting ability
Calcium channel blockers	<ul style="list-style-type: none"> • May cause impaired emptying, urinary retention, and constipation that can contribute to UI • May cause dependent edema, which can contribute to nocturnal polyuria
Cholinesterase inhibitors	Increase bladder contractility and may precipitate urgency UI
Diuretics	Cause diuresis and precipitate UI
Lithium	Polyuria due to diabetes insipidus
Opioid analgesics	May cause urinary retention, constipation, confusion, and immobility, all of which can contribute to UI
Psychotropic drugs <ul style="list-style-type: none"> • Sedatives • Hypnotics • Antipsychotics • Histamine-1 receptor antagonists 	<ul style="list-style-type: none"> • May cause confusion and impaired mobility and precipitate UI • Anticholinergic effects • Confusion
Selective serotonin reuptake inhibitors	Increase cholinergic transmission and may lead to UI
Sodium-glucose cotransporter-2 inhibitors	Glycosuria and polyuria, increased propensity to urinary tract infection
Others <ul style="list-style-type: none"> • Gabapentin • Glitazones • Nonsteroidal anti-inflammatory agents 	Can cause edema, which can lead to nocturnal polyuria and cause nocturia and nighttime UI

UI—urinary incontinence.
Adapted with permission from the International Continence Society.¹³

Box 1. Assessment of acute and subacute urinary incontinence: DIAPPERS mnemonic.

In patients presenting with new-onset urinary incontinence the following potential causes, with the mnemonic DIAPPERS,¹⁴ should be considered:

- Delirium
- Infection*
- Atrophic vaginitis (genitourinary syndrome of menopause)
- Pharmaceuticals (Table 2)^{12,13}
- Psychological
- Excess urine output
- Reduced mobility
- Stool impaction

*Avoid treatment of asymptomatic bacteriuria.

The minimal examination includes abdominal examination for palpable bladder, assessment of external genitalia for abnormalities (eg, phimosis, incontinence-related dermatitis), and basic examination for urogenital

atrophy and pelvic organ prolapse in women. A rectal examination should be done to exclude fecal loading and to assess the prostate in men. In patients with evidence of neurologic disease, a screening examination is important. An essential part of the evaluation is noting the patient's physical and cognitive abilities to get to the toilet, undress, void, and wash and dress afterward.

A bedside dipstick urinalysis (for hematuria, glycosuria, or bacteriuria) should be performed. In addition, if there are voiding symptoms a postvoid residual volume should be recorded using a hand-held ultrasound device or in-and-out catheterization if ultrasound is not available.²¹ Catheterization is, of course, associated with a small risk of infection.

If the concern is of stress urinary incontinence, a lying or standing cough test can be done. To perform a standing cough test, ask the patient to stand and to cough; the test is positive if any degree of urine leakage occurs. The Q-tip test or other tests of urethral hypermobility are of limited usefulness and guidelines recommend against their use.²¹

In the majority of cases investigations such as an ultrasound scan of the lower urinary tract, laboratory tests, or cystometry are not required. The presence of bacteriuria in a patient with chronic LUTS is of controversial importance; if the urine dip or symptoms suggests bacteriuria, a midstream urine sample should be sent for analysis and appropriate antibiotics should be prescribed based on the culture result. If LUTS are unaffected, a repeat prescription of antibiotics is not justified. For a more detailed review of this topic please see the previously mentioned article published in the *Canadian Geriatrics Society Journal of CME*.³

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Competing interests

Dr William Gibson has received speaker honoraria from Astellas and Pfizer.

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